

REPORT CONTENT AND DEFINITIONS

To provide a context for future discussions of this issue, this report examines data on trends in Federal support of academic S&E activity during the past three decades, from fiscal year (FY) 1971 to FY 2000. It differentiates between trends in R&D support (including support for R&D plant) and trends in other, non-R&D types of S&E support identified below and referred to hereafter as “other S&E support.”² It also considers trends for different types of academic institutions over this period, in terms of the number receiving Federal funding and the share of funds received. (See the Technical Note at the end of the report for a discussion about the group of institutions that is the basis for this report.) Finally, it discusses shifts in the focus of Federal support between R&D and all other types of S&E activities. These trends are examined in the aggregate and also for selected Federal agencies that are major sources of academic S&E funding.

In its congressionally mandated annual Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, the National Science Foundation (NSF) collects statistical data from about 18 agencies that account for virtually all Federal R&D support at academic institutions. In addition to annual Detailed Statistical Tables summarizing each survey year, the most current and updated data are contained in NSF’s WebCASPAR data system (available at <http://www.caspar.nsf.gov/>)—the source of the information for this study.

NSF collects data for the following six categories of S&E support: conduct of R&D; R&D plant; facilities and equipment for S&E instruction; fellowships, traineeships, and training grants; general support for S&E; and other S&E activities. These categories are defined in the sidebar “Definitions of Federal Funding Categories”³ on the following page.

² The concept of Federal S&E support in this paper differs from several alternative concepts that have been introduced in recent years to isolate and describe fractions of Federal support that could be associated with scientific achievement and technological progress, including the concept of the Federal Science and Technology (S&T) budget. For a description of these concepts, see the sidebar “The Federal Science and Technology Budget and Related Concepts” in National Science Board, 2002, *Science and Engineering Indicators—2002*, NSB-02-1, Arlington, VA: National Science Foundation.

³ The line between R&D and non-R&D S&E activities is often blurred. Research and teaching are often integrated. Funds are frequently provided for general or multiple uses that sometimes include research. The four activities under “other S&E support” are less directly related to R&D and more directly related to instruction than either the conduct of R&D or R&D plant. Therefore, for this analysis, they have been grouped and classified as “other S&E support” to differentiate them from more direct R&D activities.

Definitions of Federal Funding Categories

R&D

- **R&D**—includes all research activities, both basic and applied, and all development activities that are supported at universities and colleges. Demonstration projects conducted to discover whether a technology or method is workable are considered to be within the scope of R&D if their objective is to produce new information within a specific time period.
- **R&D plant**—includes projects with the main objective of providing support for the construction, acquisition, renovation, modification, repair, or rental of facilities, land, works, or fixed equipment for use in S&E R&D. A facility is interpreted broadly to be any physical resource important to the conduct of R&D. Excluded are expendable research equipment and office furniture and equipment.

“Other S&E Support”

- **Facilities and equipment for S&E instruction**—include all programs whose main purpose is providing support for the construction, acquisition, renovation, modification, repair, or rental of facilities, land, works, or equipment for use in instruction in S&E.

- **Fellowships, traineeships, and training grants**—include all fellowship, traineeship, and training grant programs that are directed primarily toward the development and maintenance of S&E personnel resources.
- **General support for S&E**—includes programs that support nonspecific or generalized purposes related to scientific research and education. Such projects are generally oriented toward academic departments, institutes, or institutions as a whole. The support offered in this area ranges from that provided without any specification of purpose (other than that the funds be used for scientific projects) to that provided for activities within a specified field of S&E without a specific purpose.
- **Other S&E activities**—are those academic S&E activities that cannot be assigned to any of the preceding five categories, including support for scientific conferences, teacher institutes, and activities aimed at increasing the scientific knowledge of precollege and undergraduate students.